

Amendments to the Claims

Claims 1-78 (cancelled).

Claim 79 (currently amended): An ionization source comprising:

 a sample inlet;

 an electrically conductive conduit coupled to the sample inlet, the conduit having a first end and a second end, wherein the first end is configured to receive a sample from the sample inlet and the second end is configured to discharge the sample from the sample conduit;

 an electrically conductive reference device positioned proximate the second end of the conduit, the reference device and the conduit having an ionization area therebetween, wherein the reference device and the conduit are configured to ionize at least a portion of the sample within the ionization area; and

 an ion analyzer configured to receive at least some of the portion of the sample.

Claim 80 (previously presented): The source of claim 79 wherein the reference device further comprises a discharge portion coupled to the reference device and located between the second end of the conduit and the ion analyzer.

Claim 81 (previously presented): The source of claim 79 wherein the reference device further comprises a plurality of openings, the openings being configured to allow for the removal of sweep gas from the ionization area.

Claim 82 (previously presented): The source of claim 79 wherein the reference device is located within the conduit.

Claim 83 (previously presented): The source of claim 79 wherein a distance between the conduit and the reference device is greater than the Paschen distance.

Claim 84 (previously presented): The source of claim 79 wherein the reference device comprises a metal comprising one or more of stainless steel, platinum, and gold.

Claim 85 (previously presented): The source of claim 79 further comprising an electrical circuit configured to establish and maintain an electrical potential between the conduit and the reference device.

Claim 86 (previously presented): The source of claim 85 wherein the electrical circuit is configured to maintain at least about a 10 volt electrical potential between the conduit and the reference device.

Claim 87 (previously presented): The source of claim 85 wherein the electrical circuit is configured to maintain less than about a 250 volt electrical potential between the conduit and the reference device.

Claim 88 (previously presented): The source of claim 79 wherein the conduit is electrically grounded.

Claim 89 (previously presented): The source of claim 79 wherein the reference device and the conduit have different electric potentials applied thereto.

Claim 90 (withdrawn): A sample ionization method comprising:

- providing an electrically conductive sample conduit having a discharge end;
- providing a reference device proximate the discharge end of the conduit;
- maintaining an electrical potential between the conduit and the reference device;
- transporting a sample through the discharge end; and
- causing electrical arcing between the conduit and the reference device to ionize at least a portion of the sample to produce analyte ions.

Claim 91 (withdrawn): The method of claim 90 wherein the transporting comprises providing a carrier fluid for transporting the sample.

Claim 92 (withdrawn): The method of claim 91 wherein the carrier fluid is a gas.

Claim 93 (withdrawn): The method of claim 90 wherein the electrical potential between the conduit and reference device is maintained slightly above a breakdown potential and the electrical arcing between the conduit and the reference device is caused by the presence of the sample altering the breakdown potential.

Claim 94 (withdrawn): The method of claim 90 wherein the electrical potential between the conduit and the reference device is maintained such as to produce a continuous arcing therebetween.

Claim 95 (withdrawn): The method of claim 90 wherein the electrical potential between the conduit and reference device is initially maintained at a level below a breakdown potential therebetween, the method further comprising periodically increasing the potential between the conduit and the reference device to cause periodic corona discharge there between.

Claim 96 (withdrawn): The method of claim 90 further comprising analyzing the analyte ions using an analyzer.

Claim 97 (withdrawn): The method of claim 90 wherein the method is performed within an ion mobility spectrometer.

Claim 98 (withdrawn): The method of claim 90 wherein the method is performed within an atmospheric pressure ionization mass spectrometer.

Claim 99 (new): The source of claim 79 wherein the sample inlet is electrically isolated from the electrically conductive conduit.